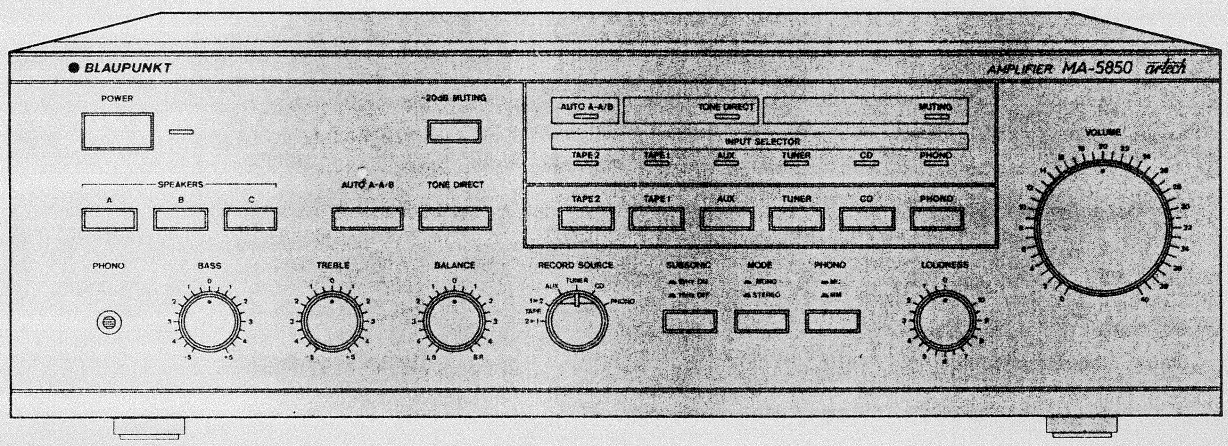
BLAUPUNKT
BOSCH Gruppe

Amplifier MA-5850

artech

7 625 330

Kundendienstschrift · Service Manual



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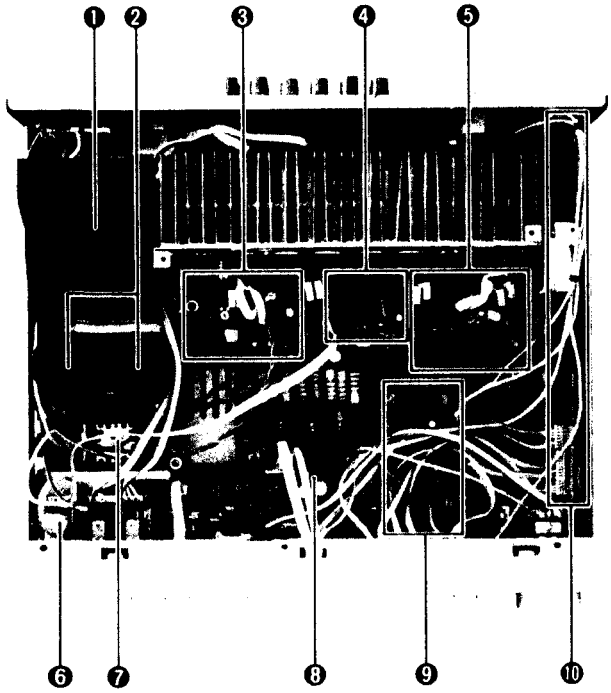
Technische Daten

Technical Data

Bezeichnung	Wert / Value	Designation
Netzspannung	220 V/50 Hz	Power Supply
Leistungsaufnahme	470 W	Power Consumption
Nennleistung		Continuous Power Per Channel
20 Hz - 20 kHz, K = 0,005 %, 8 Ω	100 W	20 Hz - 20 kHz, K = 0.005 %, 8 Ω
1 kHz, K = 1 %, 4 Ω	150 W	1 kHz, K = 1 %, 4 Ω
CLASS-A, 8 Ω	5 W	CLASS-A, 8 Ω
Musikleistung		Dynamic Power Per Channel
1 kHz, 8 Ω	150 W	1 kHz, 8 Ω
1 kHz, 4 Ω	240 W	1 kHz, 4 Ω
Dämpfungsfaktor 1 kHz, 8 Ω	45	Damping Factor 1 kHz, 8 Ω
Leistungsbandbreite		Power Bandwidth
K = 0,03 %, 52,5 W, 8 Ω	10 Hz - 50 kHz	K = 0.03 %, 52.5 W, 8 Ω
Frequenzgang 20 Hz - 20 kHz		Frequency Response 20 Hz - 20 kHz
CD, AUX, TAPE, TUNER	+ 0/ - 0,5 dB	CD, AUX, TAPE, TUNER
PHONO MC	± 0,3 dB	PHONO MC
PHONO MM	± 0,2 dB	PHONO MM
Klirrfaktor 20 Hz - 20 kHz		Intermodulation/Distortion 20 Hz - 20 kHz
zwischen		between
PHONO MC und REC OUT	0,006 %	PHONO MC and REC OUT
zwischen		between
PHONO MM und REC OUT	0,003 %	PHONO MM and REC OUT
zwischen		between
CD, AUX, TAPE, TUNER und		CD, AUX, TAPE, TUNER to
LA-Ausgang, 100 W. 8 Ω	0,005 %	SP Out, 100 W,8 Ω
Intermodulation 1 W, 8 Ω		Intermodulation 1 W,8 Ω
CD, AUX, TAPE, TUNER	0,003 %	CD, AUX, TAPE, TUNER
Fremdspannungsabstand		Signal-to-Noise Ratio
PHONO MC (500 μV)	75 dB	PHONO MC (500 μV)
PHONO MM (5 mV)	92 dB	PHONO MM (5 mV)
CD, AUX, TAPE, TUNER		CD, AUX, TAPE, TUNER
TONE DIRECT ein	106 dB	TONE DIRECT on
Stereo-Übersprechdämpfung 1 kHz, -30 dB		Channel Separation 1 kHz, -30 dB
PHONO MC, MM	70 dB	PHONO MC, MM
TUNER, CD, AUX, TAPE	65 dB	TUNER, CD, AUX, TAPE
Eingangsempfindlichkeit/Impedanz		Input Sensitivity/Impedance
PHONO MC	160 μV/220 Ω	PHONO MC
PHONO MM	2,5 mV/47 kΩ	PHONO MM
CD, AUX, TAPE, TUNER	150 mV/47 kΩ	CD, AUX, TAPE, TUNER
Ausgangsspannung/Impedanz		Output Level/Impedance
REC OUT	150 mV/470 Ω	REC OUT
Kopfhörer (K = 0,005 %)	830 mV/ 8 Ω	Headphones (K = 0.005 %)
Klangregelung		Tone Control Characteristics
BASS (20 Hz)	± 10 dB	BASS (20Hz)
Übergangsfrequenz	350 Hz	Turnover Frequency
TREBLE (20 Hz)	± 10 dB	TREBLE (20Hz)
Übergangsfrequenz	3,5 kHz	Turnover Frequency
MUTING (Lautstärkeabsenkung)	20 dB	MUTING (Volume reduction)
LOUDNESS-Einstellbereich 1 kHz	40 dB	Continuous Loudness Control 1kHz
SUBSONIC-Filterdämpfung 15 Hz	12 dB/Okt.	Filter Characteristics 15 Hz
Abmessungen Breite	435 mm	Dimensions Width
Höhe	147 mm	Height
Tiefe	399 mm	Depth
Gewicht	10,2 kg	Weight

Innenansicht



Internal View

❶ Netztrafo/Power transformer
❷ C 263/264 (22 000 µF/69 V)
❸ Endstufe/Power ampl. (Rch)
❹ Schutzschaltung/Protection section
❺ Endstufe/Power ampl. (Lch)
❻ Netzschalter/Power switch
❼ D 226 (D 5 FB 20)
❽ Hauptplatine/Main circuit board
❾ Entzerrer-Vorverstärker/EQ Ampl. section
❿ Funktionsplatine/Function circuit board

Zerlegungshinweise

Abnehmen des Gehäuseoberteils

5 Schrauben ① herausdrehen und das Gehäuseoberteil nach hinten abziehen.

Abnehmen der Frontblende

6 Schrauben ② herausdrehen und die Frontblende nach vorn abziehen.

Abnehmen der Bodenplatte

6 Schrauben ③ herausdrehen und die Bodenplatte abnehmen.

Disassembly Hints

Removal of the top cover

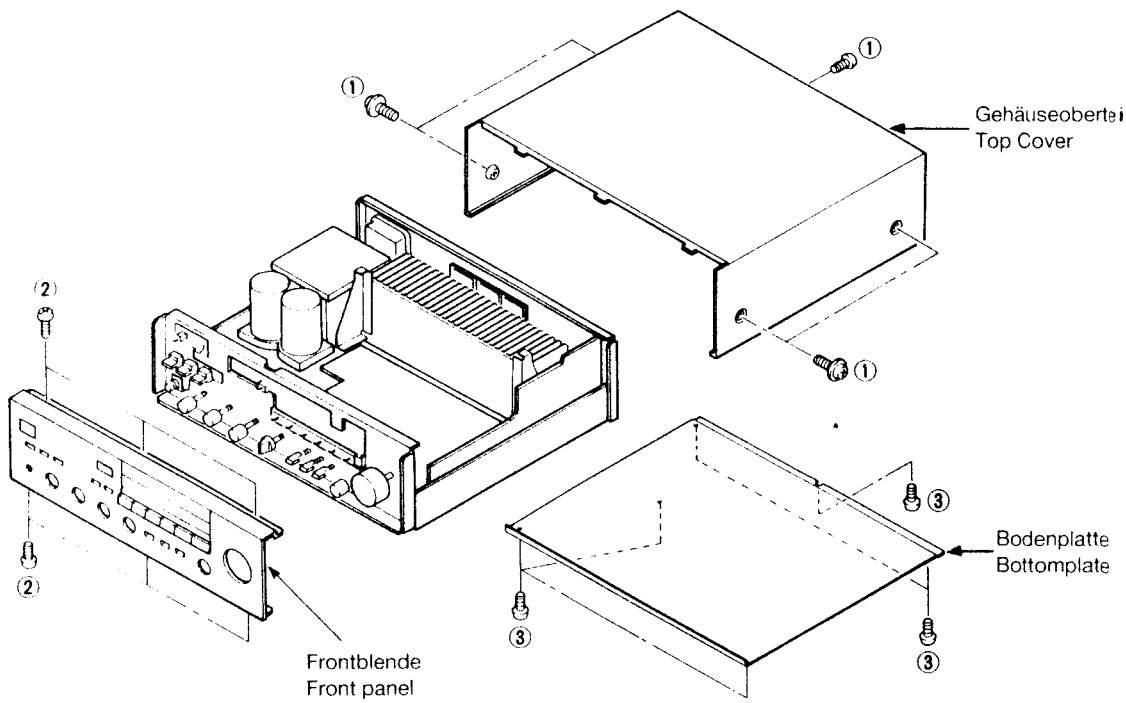
Unscrew 5 screws ① and pull off the top cover toward the rear.

Removal of the front panel

Unscrew 6 screws ② and pull off the front panel toward the front.

Removal of the bottom plate

Unscrew 6 screws ③ and remove the bottom plate.



Einstellen des Ruhestromes

Der Ruhestrom muß eingestellt werden, wenn die Endstufentransistoren gewechselt wurden. Der Ruhestrom wird als Spannungsabfall über den Widerstand R 271 (L) bzw. R 272 (R) gemessen.

Zum Einstellen gehen Sie folgendermaßen vor:

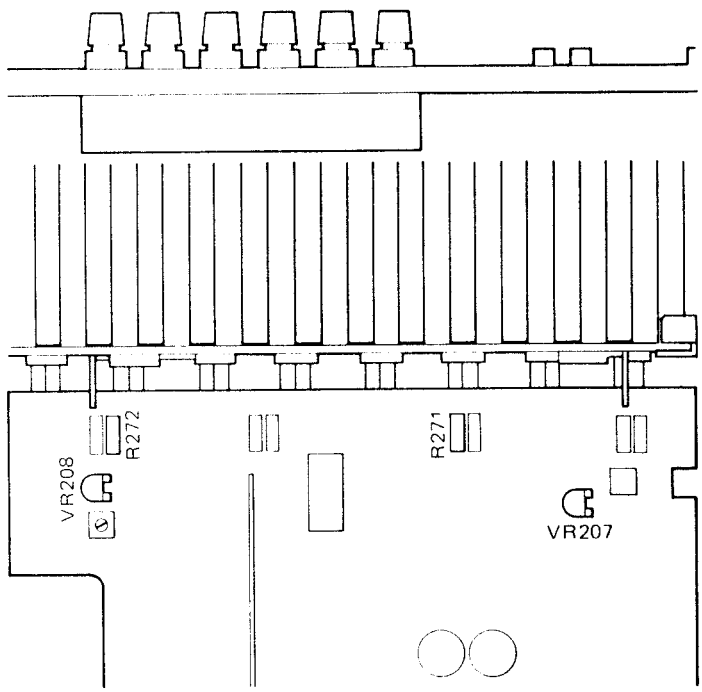
1. Schalten Sie den Verstärker ein.
2. Stellen Sie die Lautstärke auf Minimum und schalten Sie die Lautsprecher ab.
3. Schalten Sie den Verstärker in A/B-Betrieb (Taste A-A/B auslösen) und lassen ihn ca. 5 Minuten warmlaufen.
4. Schließen Sie ein Gleichspannungsvoltmeter an R 271 (L) bzw. R 272 (R) an.
5. Stellen Sie mit dem Poti VR 207 (L) bzw. VR 208 (R) einen Spannungsabfall von 5 mV ± 1 mV ein.
6. Schalten Sie den Verstärker in A-Betrieb (Taste A-A/B drücken) und überprüfen Sie, ob der Spannungsabfall nach ca. 2 Minuten 60 mV ± 30 mV beträgt.

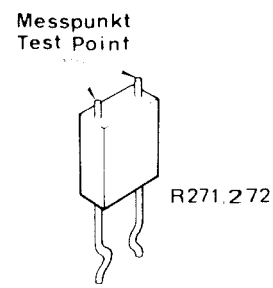
Adjusting the Idling Current

The idling current must be adjusted when the output stage transistors were exchanged. The anode current is measured as the voltage drop over the resistor R 271 (L) resp. R 272 (R).

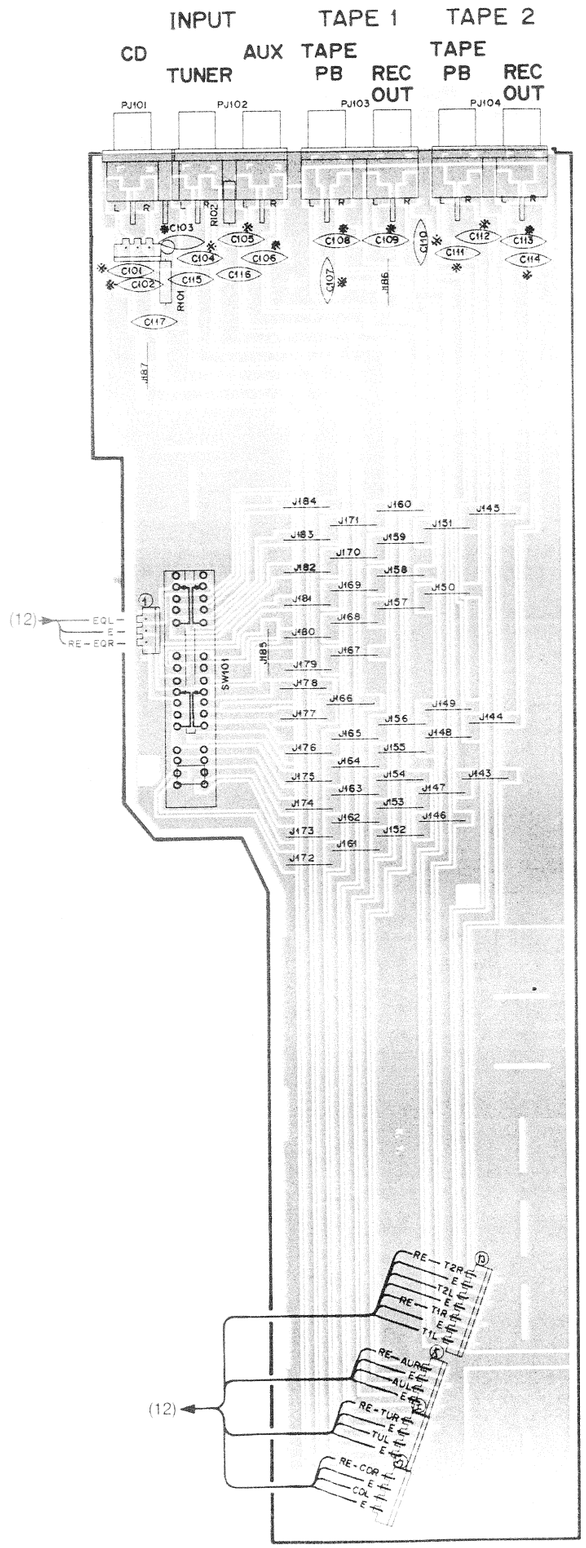
To adjust, proceed as follows:

1. Switch the amplifier on.
2. Set the volume to a minimum and switch off the loudspeakers.
3. Switch the amplifier to A/B mode (disengage button A-A/B) and allow the unit to warm up for about 5 minutes.
4. Connect a DC voltmeter to R 271 (L) resp. R 272 (R).
5. Using the potentiometer VR 207 (L) resp. VR 208 (R) adjust a voltage drop of 5 mV ± 1 mV.
6. Switch the amplifier to A mode (press button A-A/B) and check whether voltage drop after about 2 minutes is 60 mV ± 30 mV.

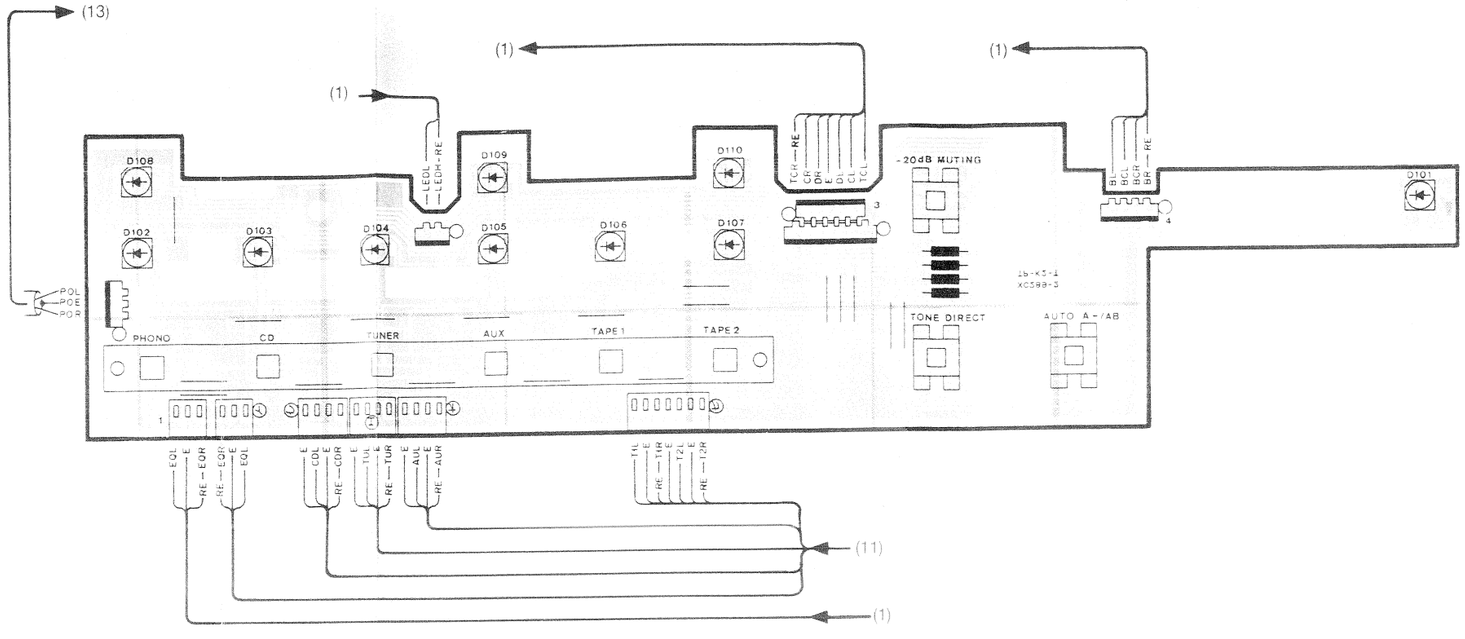




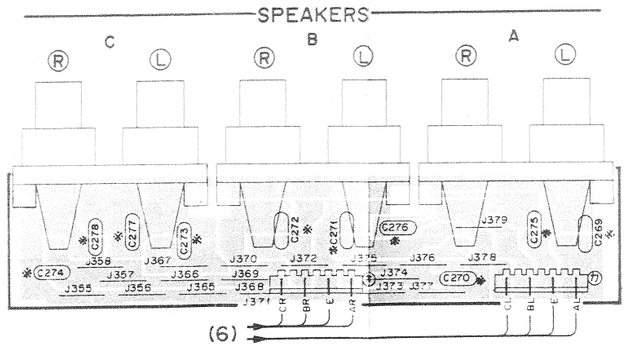
Funktionsplatine (11)
Function Circuit Board (11)



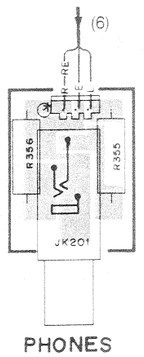
Funktionsplatine (12)
Function Circuit Board (12)



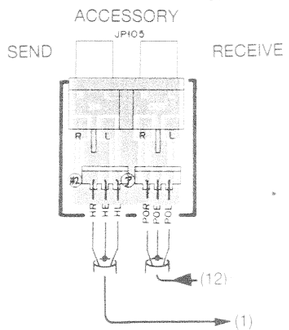
Hauptplatine (7)
Main Circuit Board (7)



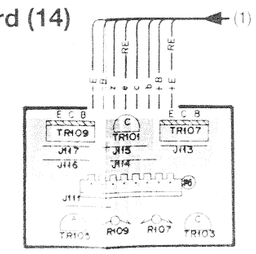
Hauptplatine (8)
Main Circuit Board (8)



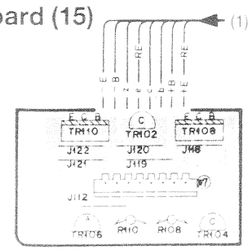
Funktionsplatine (13)
Function Circuit Board (13)



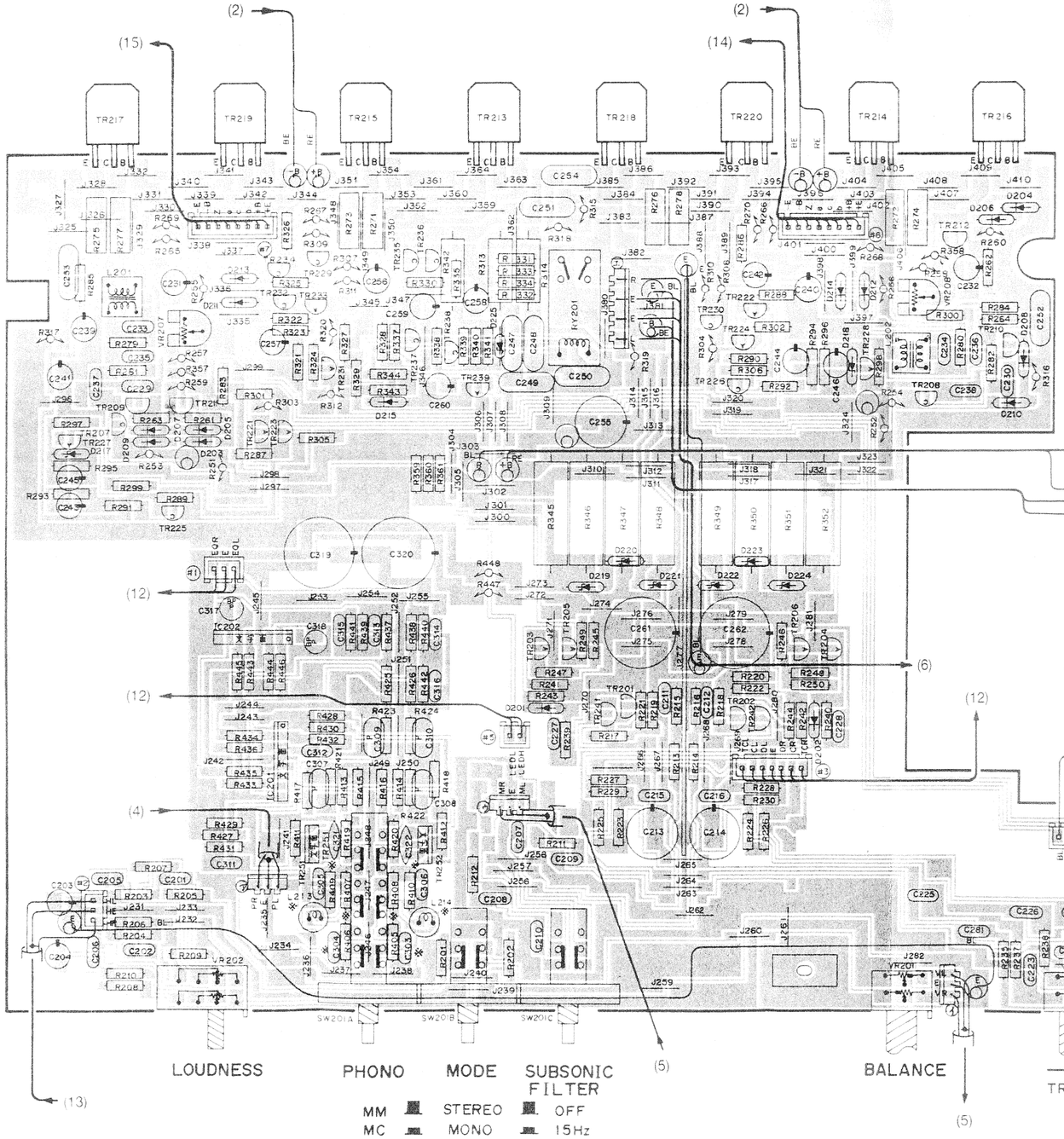
Funktionsplatine (14)
Function Circuit Board (14)



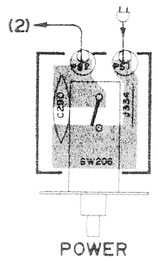
Funktionsplatine (15)
Function Circuit Board (15)



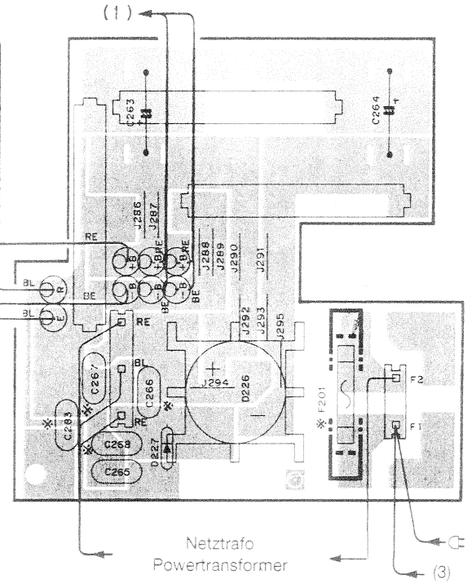
Hauptplatine (1)
Main Circuit Board (1)



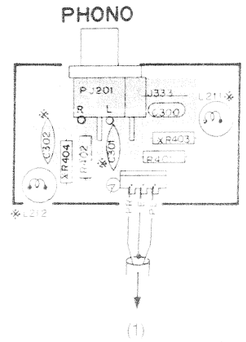
Hauptplatine (3)
Main Circuit Board (3)



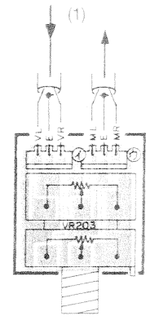
Hauptplatine (2)
Main Circuit Board (2)



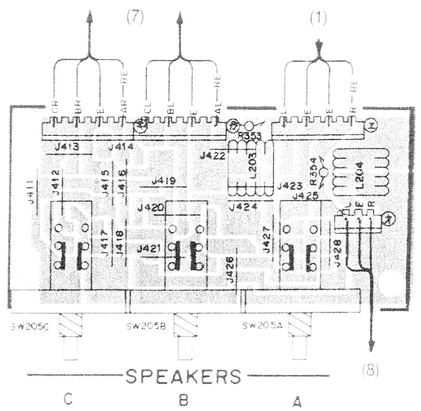
Hauptplatine (4)
Main Circuit Board (4)



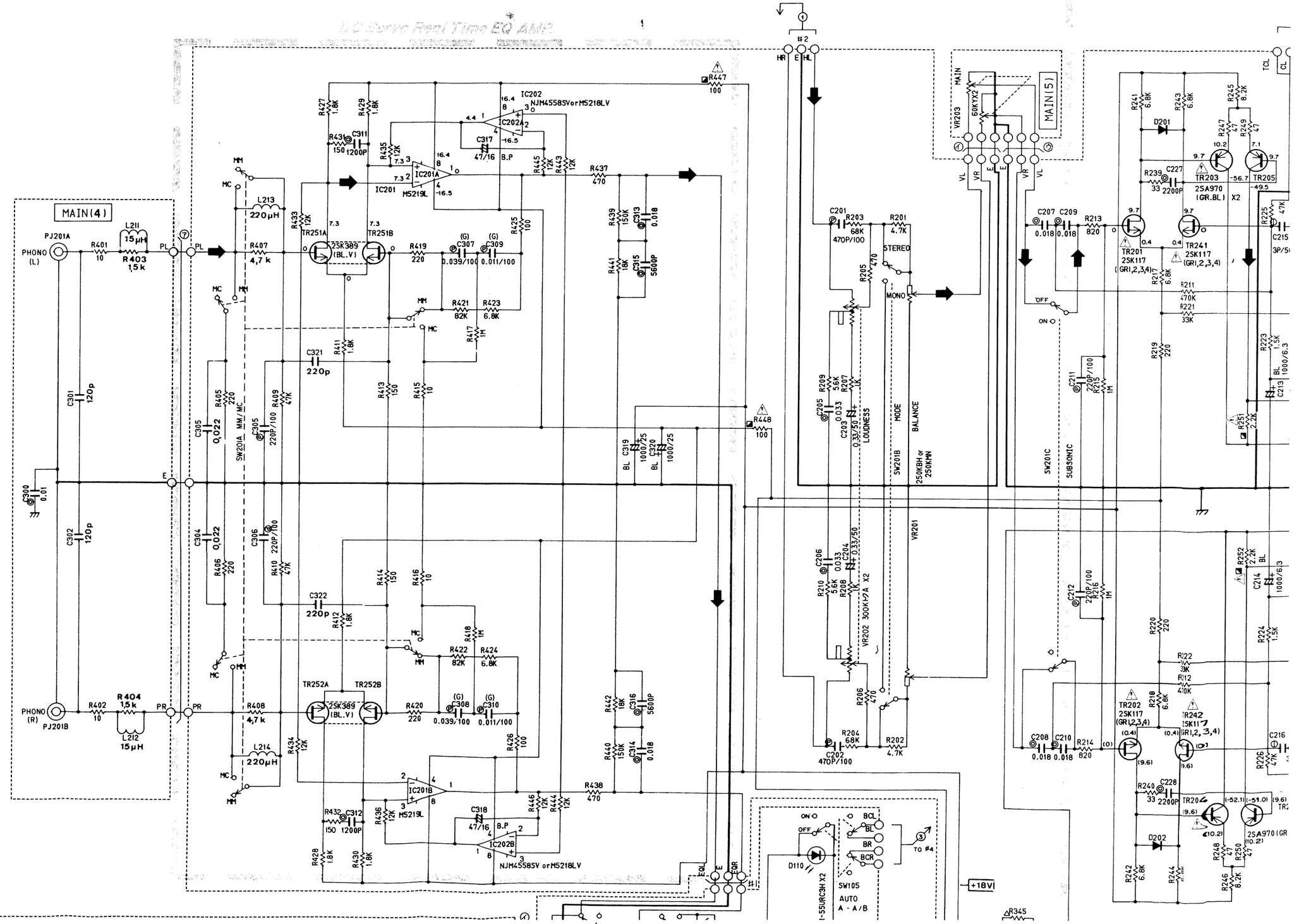
Hauptplatine (5)
Main Circuit Board (5)

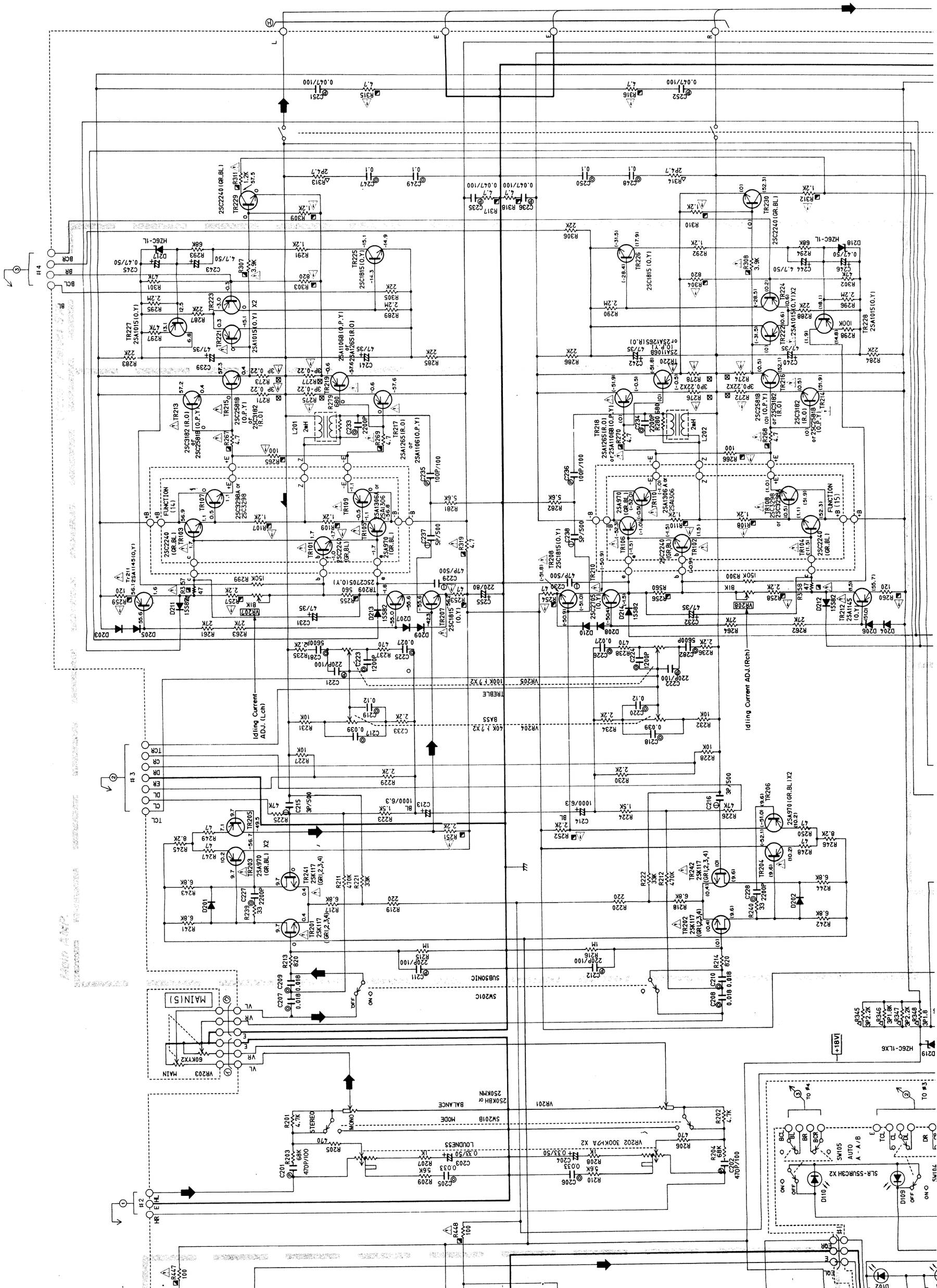


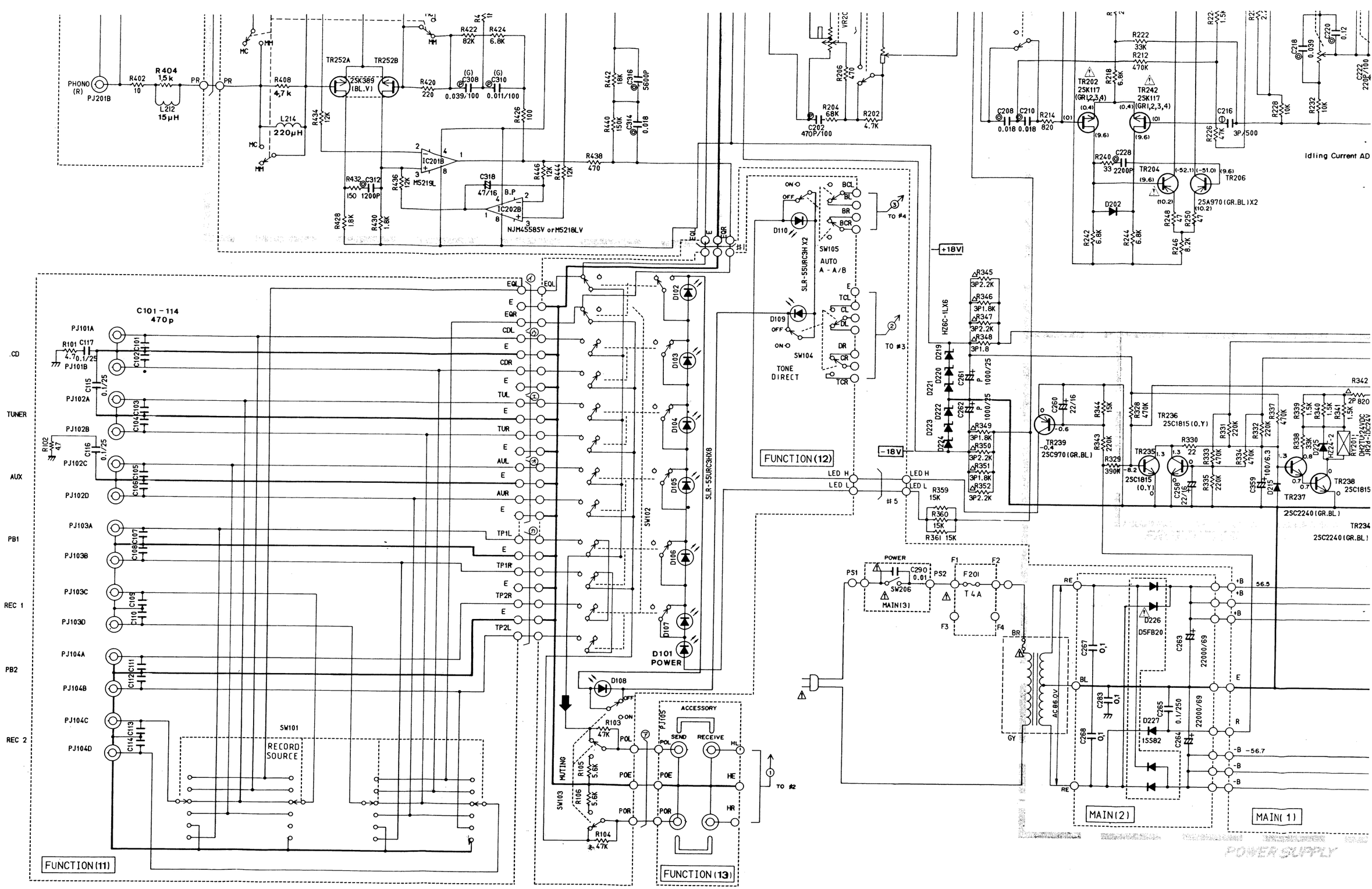
Hauptplatine (6)
Main Circuit Board (6)



Schaltbild


MAIN(4)
PJ201A
PHONO (L)
PJ201B
PHONO (R)
R401 10
R402 10
L211 15µH
R403 1,5k
L212 15µH
R404 1,5k
PL
PR
E
L213 220µH
L214 220µH
R407 4,7 k
R408 4,7 k
SW201A MM/MC
C301 120p
C302 120p
C300 0.01
C305 0,022
C304 0,022
R405 220
R406 220
C305 220P/100
C306 220P/100
R409 47K
R410 47K
R411 1.8K
R412 1.8K
R413 150
R414 150
R415 10
R416 10
C321 220p
C322 220p
MM
MC
TR251A 2SK389 (BL.V)
TR251B
TR252A
TR252B
R419 220
R420 220
C307 0.039/100
C308 0.039/100
C309 0.011/100
C310 0.011/100
R421 82K
R422 82K
R423 6.8K
R424 6.8K
R417 1M
R418 1M
IC201 M5219L
IC201A
IC201B
R427 1.8K
R428 1.8K
R429 1.8K
R430 1.8K
R431 150
R432 150
C311 1200P
C312 1200P
R435 12K
R436 12K
C317 47/16 B.P
C318 47/16 B.P
IC202 NJM4558SV or M5218LV
IC202A
IC202B
R433 12K
R434 12K
TR251A
TR251B
TR252A
TR252B
R425 100
R426 100
R445 12K
R443 12K
R446 12K
R444 12K
R437 470
R438 470
R447 100
R448 100
C313 0.018
C315 5600P
C316 5600P
C314 0.018
R439 150K
R441 18K
R442 18K
R440 150K
EQL
EQR
#2
HR
E
HL
C201 470P/100
C202 470P/100
R203 68K
R204 68K
R201 4.7K
R202 4.7K
R205 470
R206 470
STEREO
MONO
VR203 60KYX2
MAIN
MAIN(5)
VL
VR
E
C205 0.033
C206 0.033
C203 0.33/50
C204 0.33/50
R209 5.6K
R310 5.6K
R207 1K
R208 300K+2A X2
VR202 300K+2A X2
LOUDNESS
MODE
BALANCE
SW201B
250KBH or 250KMN
VR201
SW201C
SUBSONIC
ON
OFF
D110
1-55URC3H X2
SW105
AUTO
A - A/B
BCL
BL
BR
BCR
TO #4
+18V
TCL
CL
R241 6.8K
R243 6.8K
R245 8.2K
D201
R247 47
R249 47
TR203 2SA970 (GR.BL)
TR205
R239 33
C227 2200P
TR201 2SK117 (GR.2,3,4)
TR241 2SK117 (GR.1,2,3,4)
C207 0.018
C209 0.018
R213 820
C208 0.018
C210 0.018
R214 820
TR202 2SK117 (GR.2,3,4)
TR242 2SK117 (GR.1,2,3,4)
R217 6.8K
R218 6.8K
R211 470K
R221 33K
R219 220
R220 220
R222 33K
R212 470K
C211 220P/100
R215 1M
C212 220P/100
R216 1M
R223 1.5K
R224 1.5K
R251 2.2K
R252 2.2K
C213 1000/6.3
C214 1000/6.3
R225 47K
C215 3P/5
R226 47K
C216
C228 2200P
R240 33
TR204
2SA970 (GR
D202
R242 6.8K
R244 2.2K
R248 47
R250 47
R246 8.2K
R345


Idling Current ADJ. (L.ch)
Idling Current ADJ.(Rch)
TREBLE
BASS
LOUDNESS
BALANCE
MODE
STEREO
MONO
SUBSONIC
MAIN(5)
VR203 MAIN
VR201 BALANCE
VR202 300K(P)A X2
VR204 40K (P) X2
VR205 100K (P) X2
SW201A
SW201B
SW201C
SW105 AUTO A→A/B
SLR-5SURC3H X2
TO #1
TO #2
TO #3
TO #4
+18V
FUNCTION (14)
FUNCTION (15)



Halbleiter-Anschlußpunkte/Semi-Conductor Connection

2SC2581B (O, P, Y) 2SC3182 (R, O) 2SA1106B (O, P, Y) 2SA1265 (R, O)	2SA1306A 2SC3298A 2SA1306 2SC3298	2SK389 (BL, V)	2SK117 (GR1, 2, 3, 4)	2SA970 (GR, BL) 2SA1015 (Y) 2SA1145 (O, Y) 2SC1815 (Y) 2SC2240 (GR, BL) 2SC2705 (O, Y)	HZ24-2 1S2473 1S1555 HZ6C-1L 1SS82	D5FB20	M5218LV NJM4558S (V) M5219L

Idling Current ADJ.(Rch)

FUNCTION

SPEAKER A

SPEAKER B

SPEAKER C

C269 - 271
2700p

C272 - 274
2700p

C275 - 278
0.01

AC 86.0V

MAIN(1)

MAIN(2)

MAIN(6)

MAIN(7)

MAIN(8)

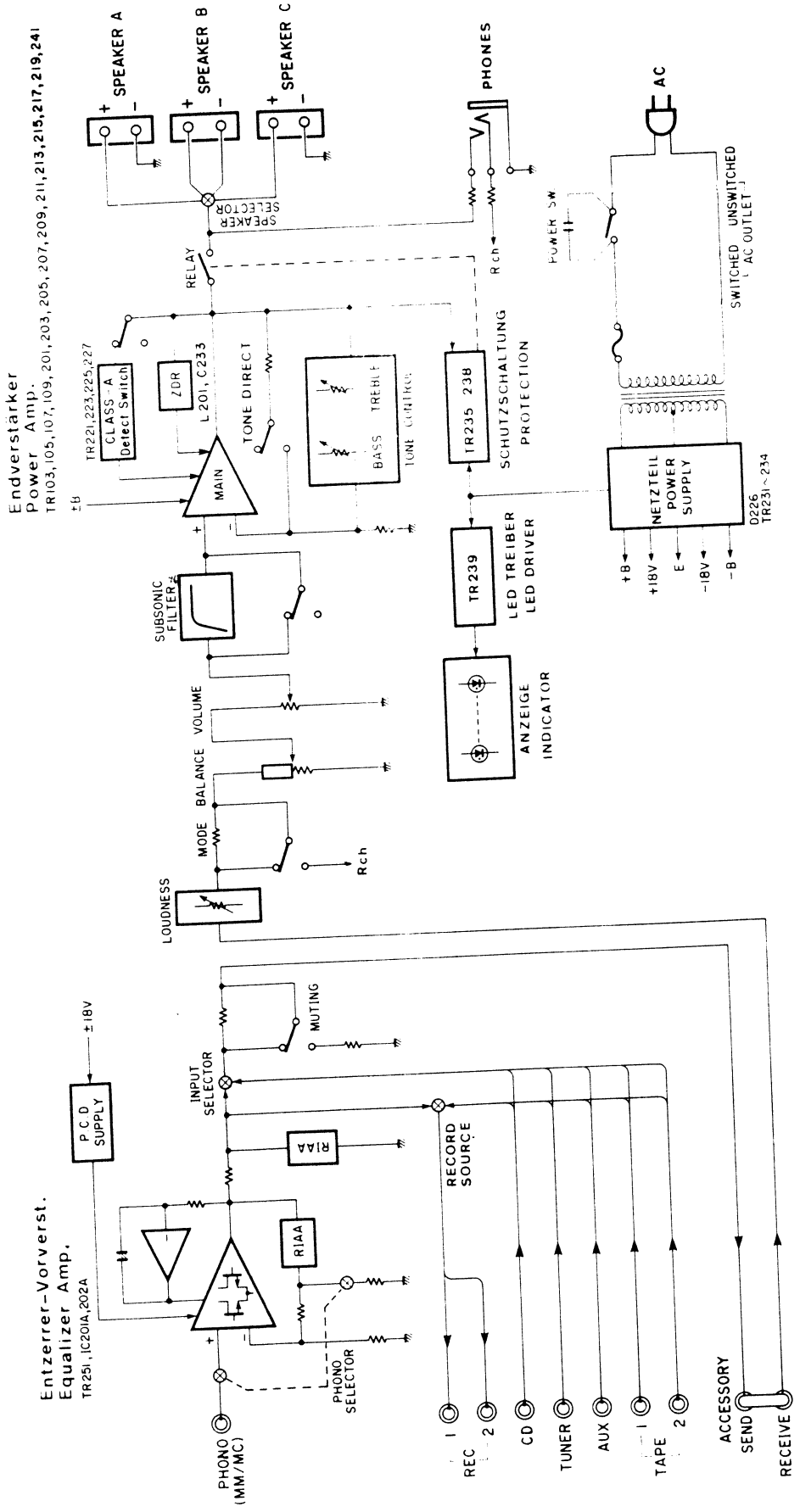
Gleichspannungen mit Voltmeter (R I = 10 MΩ)
gegen ⊥ gemessen
R-Kanal → CLASS A-Betrieb
L-Kanal → CLASS A/B-Betrieb
DC voltages measured with voltmeter (R I = 10 MΩ)
against ⊥
RH channel → CLASS A-mode
LH channel → CLASS A/B-mode

⚠ Sicherheitsbauelement (muß durch Originalteil ersetzt werden)
Security component (must be replaced by original part)

Für Werte ohne Bezeichnung μF oder Ω einsetzen.
Read μF or Ω, respectively unless otherwise noted.

Blockschaltbild

Block Diagram

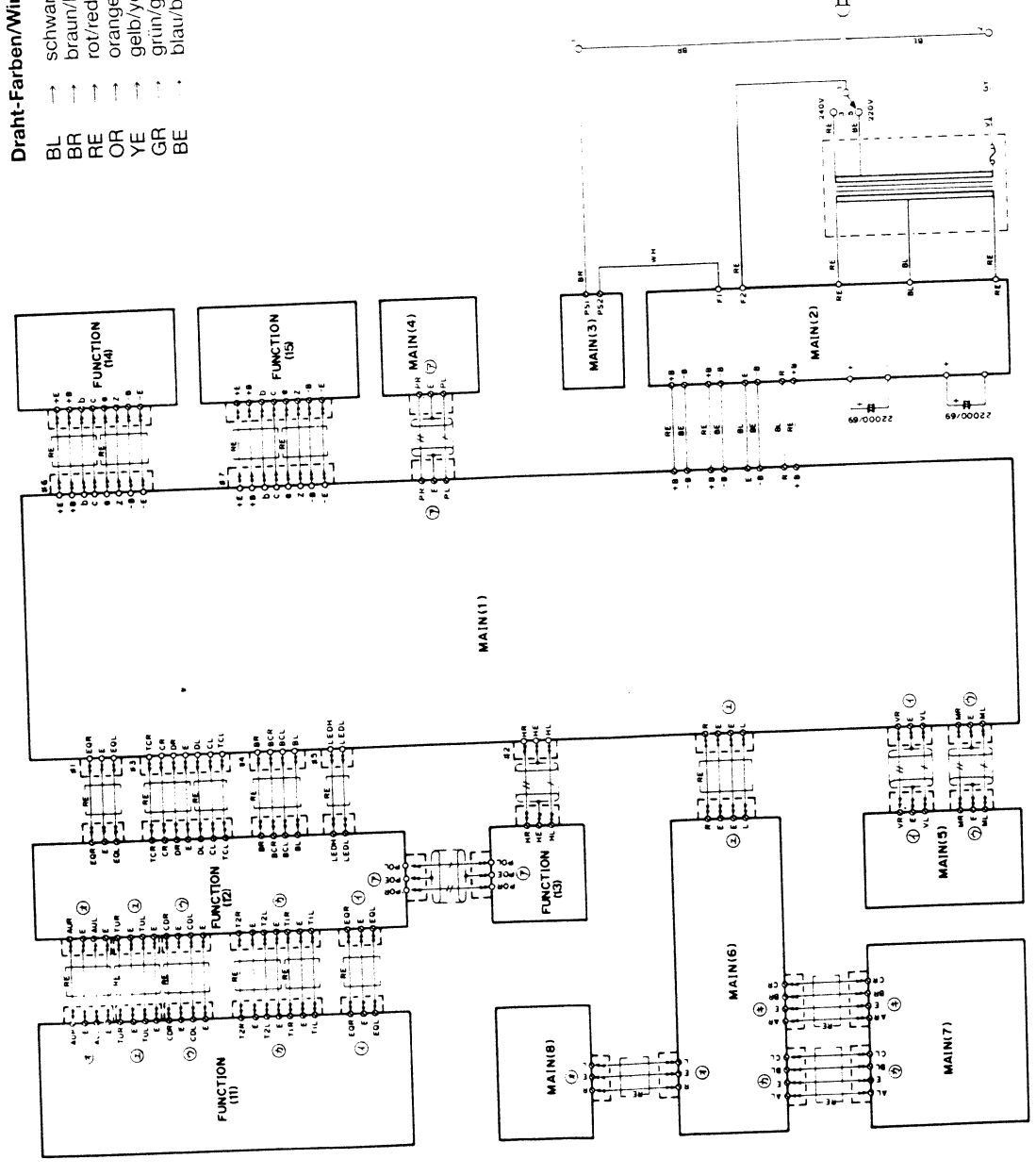


Verdrahtungsplan

Draht-Farben/Wire Color

BL	→	schwarz/black
BR	→	braun/brown
RE	→	rot/red
OR	→	orange
YE	→	gelb/yellow
GR	→	grün/green
BE	→	blau/blue

VI	→	Violet
GY	→	grau/grey
WH	→	weiß/white
GG	→	hellgrün/light green
SB	→	hellblau/light blue
PK	→	rosa/pink



Ersatzteilliste

Spare Parts List

Position Position	Bezeichnung Designation			Bestell-Nr. Part no.
D 101 - 110	SLR-55URC3H			8 945 405 431
D 201 - 210	1 S 1555 * 1 S 2473			8 905 406 110
D 211 - 214	1 SS 82			8 945 405 574
D 215	1 S 1555 * 1 S 2473			8 905 406 110
D 217 - 224	HZ6C-1L			8 905 422 212
D 225	HZ 24-2			8 945 421 156
D 226	D5FB20			8 945 405 577
D 227	1 SS 82			8 945 405 574
R 107 - 110	1,2	kΩ	0,25 W	8 941 027 016
R 251, 252	2,2	kΩ	0,25 W	8 940 599 250
R 253, 254	47	Ω	0,25 W	8 940 599 244
R 255, 256	560	Ω	0,25 W	8 940 599 247
R 257, 258	2,2	kΩ	0,25 W	8 940 599 250
R 259, 260	120	Ω	0,25 W	8 940 599 246
R 265, 266	100	Ω	0,25 W	8 940 599 245
R 267 - 270	4,7	Ω	0,25 W	8 941 027 008
R 271 - 278	0,22	Ω	5 W	8 940 599 178
R 303, 304	820	Ω	0,25 W	8 940 599 248
R 307, 308	3,9	kΩ	0,25 W	8 940 599 251
R 309 - 312	1,2	kΩ	0,25 W	8 941 027 016
R 313, 314	4,7	Ω	2 W	8 940 599 179
R 315 - 319	4,7	Ω	0,25 W	8 941 027 008
R 320	1,8	kΩ	0,25 W	8 940 599 249
R 342	820	Ω	2 W	8 940 599 181
R 345	2,2	kΩ	3 W	8 940 599 183
R 346	1,8	kΩ	3 W	8 940 599 182
R 347	2,2	kΩ	3 W	8 940 599 183
R 348, 349	1,8	kΩ	3 W	8 940 599 182
R 350	2,2	kΩ	3 W	8 940 599 183
R 351	1,8	kΩ	3 W	8 940 599 182
R 352	2,2	kΩ	3 W	8 940 599 183
R 353, 354	10	Ω	0,25 W	8 941 027 009
R 355, 356	270	Ω	2 W	8 940 599 180
VR 201	250 kΩ	(BALANCE)		8 941 599 331
VR 202	300 kΩ	(LOUDNESS)		8 941 599 330
VR 203	60 kΩ	(VOLUME)		8 941 599 332
VR 204	40 kΩ	(BASS)		8 941 599 328
VR 205	100 kΩ	(TREBLE)		8 941 599 329
VR 207 208	1 kΩ			8 941 599 324

Position Position	Bezeichnung Designation			Bestell-Nr Part no
C 279, 280	22 000	µF	69 V	8 943 499 079
C 290	0,01	µF	VDE	8 942 210 413
L 201, 202	2 mH			8 629 432 203
L 203 204	0,74	µH		8 629 432 018
L 211, 212	15	µH		8 629 432 017
L 213, 214	220	µH		8 629 432 016
RY 201	DH2TU24VDC * JR2a-DC24V			8 629 422 503
F 201	4 A	träge/slow		1 904 522 846
SW 101	RECORD SOURCE			8 629 422 216
SW 102	TAPE 2 - PHONO			8 629 422 207
SW 103 - 105	MUTING, AUTO A-A/B, TONE DIRECT			8 629 422 215
SW 201	SUBSONIC, MODE, PHONO			8 629 422 213
SW 205	SPEAKERS			8 629 422 212
SW 206	POWER			8 629 422 211